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The Natural Resource Agency— Its People and Organization

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THE NATURAL RESOURCE AGENCY—ITS PEOPLE AND ORGANIZATION

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This is the fifth of a series of policy studies conducted by the U.S. Fish and Wildlife Service in the field of resource policies and evaluation.

These papers, while sponsored by the U.S. Fish and Wildlife Service, do not necessarily reflect the official views of the Service.

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**The Natural Resource Agency—
Its People and Organization**

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Spencer H. Smith and Albert H. Rosenthal

People—The Challenge

Preface

The fish and wildlife agency within this country is a unique public entity. It performs a role of stewardship and serves as the trustee for a public owned resource.

The agency capabilities stem from only two sources—its people and its funds. Agency people collectively formulate and accomplish the stewardship mission. There is no question that individually and as a group the people are the ranking capability.

The organization is that arrangement of people through which the agency conducts its business. Each individual is assigned a program task and an associated level of responsibility and authority. Thus the organization chart constitutes the road map for the flow of activities as well as the levels of decision within the agency.

The above definitions appear to present a simple and logical system for the conduct of all agency affairs. For the most part the systems currently employed by the various natural resource agencies are efficient and effective.

Yet, all is not well. Leadership-staff misunderstanding and disagreement continue to cost valuable management time. Simply defined these are people problems. Problems that merit priority attention in maintaining the agency's vitality and state of health.

Natural resource professionals, like their agency, are unique. Basically, they are trained and hold a commitment for a stewardship role. While participative in a system of public cost and benefits, they for the most part are not active in an arena of profits and losses.

This series of papers is designed hopefully to present some thought provoking experiences and insights to natural resource agency individuals. It is not an effort to sketch out all of the problems and remedies for this management area. Rather it is an attempt to bring about individual contemplation on roles and obligations to both the natural resource and the agency.

The first paper, prepared by Clyde Jones, Director of a major federal research facility, treats the area of professional ethics and motivation. Some of the questions he was asked to address include: What motivates a research professional? What are his rewards? What are his loyalties: to the profession? to the specific assignment? to the organization? to himself? In the name of professionalism, may he confuse motives with ethics? How often does he pause to ask why he is doing what he is doing?

All professionals must deal with success and failure. In the second paper we asked C. West Churchman, who brings the approach of a research philosopher as well as that of a Professor of Business Administration, to examine the success and failure area and suggest some thoughts on this perplexing topic. Churchman's earlier essay on "Self Images of the Professional" affords an inciteful opening to further considerations of the problems faced by professionals in large organizations and how they can deal with them.

Some of the questions we asked Churchman to consider include: What are the appropriate attitudes a professional and his managers should have with respect to success or failure? How does a professional deal with differing interpretations of success or failure by himself and his organization? Can the professional adjust to the organization's goal of winning the "war" even though it means losing the "battle" in which he has been working? Do the differing aims or goals of an organization affect the professional's views of his job? Are there redeeming features to failure? Does the level of authority and responsibility affect attitudes toward success and failure?

To afford another view of the problems the professional faces in natural resource agencies, we asked Chester Phelps, a long-time head of a state fish and wildlife agency, to provide his perceptions of what he terms "bio-politics."

Some of the questions we asked Phelps to consider include: Can a public natural resource agency completely divorce its policies and activities from the political process? Would this be healthy in a democracy? How do we define "bio-politics"? Do the attitudes toward political influences on decision making differ depending upon the professional's level in the organization? Do the self images of the professional affect his attitudes toward the political process?

We particularly asked Phelps to review his three-decade period of service to see if he could present some case study examples in the fish and wildlife areas which may help professionals in this field find a rationale in this complex issue.

These, in summary form, are the themes of the papers which follow.

Clyde Jones

Professional Ethics and Motives

During the last several decades there has been a considerable amount of evolution in the thinking of the public and therefore public organizations, especially the U.S. Government, with regard to what it is that research biologists do, and perhaps more importantly, why do research biologists do what they do. For the research biologists that work for these kinds of public organizations, like the U.S. Fish and Wildlife Service, there are several changes in their lives that have taken place. They are under an ever increasing amount of public observation. They are subjected to an enhanced amount of peer review and evaluation. They are under an intensified amount of surveillance by higher authorities within the organization. They are expected to be completely accountable to each of these three groups. They are expected to produce sound scientific results within a brief time frame that are responsive to the needs of the organization, that are acceptable to the public, and they must maintain high levels of professional esteem among their peers. Researchers are expected to be right. One is reminded that baseball players are considered as outstanding when they have "batting averages" of about 0.400; research biologists with "batting averages" that indicate that they are not correct approximately 100 percent of the time are subject to all sorts of criticism, low performance evaluations, and perhaps dismissal.

In other words, in addition to full utilization of the scientific method in the development of research activities, which they have been trained to do, research biologists now must carry out a complete assessment and detailed analysis of the consequences of what they do, which they have not been trained to do. In most cases, research biologists must conduct a kind of environmental impact analysis of sorts for a given research project; they must conduct a somewhat similar analysis of their professional motives and the consequences of the use of their organization as a way of expressing research results that frequently reflect some kind of a stand on an issue.

The question of why research biologists study the things that they do is an interesting one. The reasons that these sorts of people do what they do comprise a lengthy list.

Money
Prestige
Direction
Conscience
Theory
Research
Compassion
Pressure
Pleasure
Morality
Resource Concern
Ethics
Profession
Solution
Goal
Fun
Ego
Influence
Dedication
Procedures
Teaching
Coincidence
Performance Requirement
Job
Single Interest
Fundamental Scientific Inquiry
Power
Knowledge
Assignment
Question
Systems
Development
Invitation
Drama
Accident
Obsession
Personal Gain
Politics
Vocation
Education
Special Interest
Hobby
Arrogance
Uniqueness
Hypothesis
Love
Flamboyance
Legislative Mandate
Information
Objective
Challenge

An examination of the aforementioned possible reasons for doing research leads to the question: Is research to the research biologist a profession, a vocation, a crusade, a job, something else? The answer to this question is crucial to the overall philosophy, attitude, and corresponding success, failure, performance, and use of the organization by the research biologist. The results relate to the credibility of a research person among his peers and his administrators, which in turn reflect on the credibility and status of the professional and his organization.

A research biologist in these modern times must have a wide array of loyalties. He must be loyal to the profession and loyal to the organization. In relation to, dealing with, and working within this sort of framework, the research person must exhibit considerable strength of character and spirit of accommodation. There will be numerous conflicts; thus, there must be the right of appeal to resolve the conflicts within the hierarchial chain of authority and supervision. The research biologist, as an employee, must develop an understanding of directed authority, which is the premise upon which mission-oriented, especially government, organizations accomplish their mandates. The employee is required to develop an understanding of the job assignment. There must be careful evaluation to insure that the mission is being accomplished. In addition, it is imperative that there is a feedback and reward system if it is being accomplished, as well as a system for corrective actions to be taken, if it is not.

Real loyalties are not either bought or directed; instead they are developed by mutual understanding, trust, and respect. When the aforementioned loyalties and understandings are properly developed, there is a proper, balanced relationship between professional loyalty and organizational loyalty; there is a resultant professional ethic and credibility at all levels. When this occurs, morale will be high, attitudes will be positive, and productivity will be more than adequate.

The balance of loyalties mentioned above is very difficult to achieve for the research biologist, as well as for the managers of research persons. All are relatively untrained and inexperienced in bio-politics, solution resolution, the decision process, evaluations of performances, motivation, appraisals, and rewards systems. Many seem to be either confused or naive about bio-politics vs. bio-ethics, broad scope of interest vs. single purpose, solution vs. failure, the relationships of success and failure especially at the various hierarchial levels, communications, and impacts. Most seem to be struggling with themselves with regard to their own professional images. Churchman (1981) wrote that "... self image means not merely an image of oneself alone, but also and more importantly, an image of how one's life relates to the lives of others... The self image of the professional is therefore an image of the way in which the professional service relates to other human beings."[1]

The supervisors of research personnel must develop strong capabilities of communication. They must know about the courses of actions taken in the decision making process in order to explain adequately the decisions and the reasons for them to the research staff. The communications must be truthful and consistent; if not, the resultant loss of credibility and corresponding reduction in effectiveness will be irreparable. The supervisors of research staffs must have an especial sensitivity to both scientific and political aspects of the actions of the individuals and the organization. They must provide assistance and guidance in role definitions for researchers, that is, they must help everyone in the organization to know where they are (what their roles are) in the organization, and consequently, in the decision making process.

A most difficult task for a research manager is coping with the day to day changes in roles due to decisions that are made by higher authority. For example, political decisions are made frequently to either start or stop research projects. The starting of new research projects and assignments is relatively simple; the changing of priorities and corresponding reassignments can be explained mostly in the context of the best person for the job concept. On the other hand, stopping a research project because of a political decision leads to a wide array of personnel relations problems. When this happens, the supervisor is faced with the question of how to maintain motivation of research persons in the face of these kinds of changes in the research program. Usually, the initial reaction of the researcher is either that he failed or that he and his work are unimportant, when in fact he probably succeeded very well with his assignment, which was to conduct an objective scientific investigation. In addition, the research person usually views the decision maker as a failure also, when in fact, he may have succeeded very well with his assignment, which was to make a decision based on the best scientific information available, as well as in consideration of all of the political issues and other factors. For example, an administrative decision made recently to stop all federal research on Compound 1080 led to a wide array of the problems noted above for a rather select group of researchers and middle level managers. As a result of this decision, a research staff was redirected from the challenging and exciting problems of solution resolution via the scientific method to the seemingly mundane tasks of the summarization of incomplete data in order to provide reports for management purposes.

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[1] Churchman, C. W. 1981. "The Self Images of the Professional." Pp 4-7 *in* People and Wildlife (Smith, S. H., and A. H. Rosenthal, Eds.) Occasional Papers, U.S. Fish and Wildlife Service, Washington, D.C. vi + 21 pp.

It is difficult for researchers to understand that the political decisions that are made are not necessarily adverse reflections on the research and the scientific results. In these sorts of cases, it is imperative that the middle level supervisors (communicators) utilize the available mechanisms for appropriate feedback and reward to the research personnel. Every effort must be made to develop levels of communication between research persons and all levels of management in order to enhance the definitions of roles at all levels. Training and retraining of persons with regard to role definition and the decision making process are needed for persons at all levels of the organization. These dilemmas are discussed in considerable detail by Rosenthal (1981)[2] and Bayton and Chapman (1972)[3].

In these modern times of changing attitudes toward progress, economic development, and federal conservatism, research biologists are being asked to conduct a wide array of impact and assessment evaluations. The former Director of the U.S. Fish and Wildlife Service, Lynn A. Greenwalt, frequently advised his staff to implement "dispassionate objectivity" in carrying out their jobs and responsibilities. The following examples are intended to illustrate why "dispassionate objectivity" for researchers is of paramount importance to their own professional ethics, scientific credibility, and resultant organizational strength:

1. An analysis was made recently of the potential impacts of phosphate mining (extraction and reclamation) in the Osceola National Forest in northern Florida. The conclusions, based on research data, were that the area probably could be mined without a great deal of undue hardship to most of the wildlife. These conclusions drew considerable criticism from special interest groups. However, it was demonstrated by the research data that the area of concern supported a relatively meager fauna, and that the mining and appropriate reclamation activities might actually enhance the habitats for wildlife. This exercise serves as a rather good example of "dispassionate objectivity" on the part of the data gathering researchers, and it is a demonstration of "passionate subjectivity" on the part of the non-data gathering critics.
2. A number of analyses have been made of trends in the populations of marine mammals of the Alaska coasts and adjacent waters. The precise numbers are unimportant for this discussion, but the results have produced considerable conflicts between researchers and managers. The major reasons for these conflicts are that the estimated numbers of animals change with each analysis because of the constant development of new and improved techniques for analyzing the available data. In addition, there is a general lack of appreciation for the facts that many of the early analyses of data were of relatively low levels of accuracy. This example illustrates a tendency of persons to defend their old actions (what they either said or believed in the past) rather than to take new actions and to deal with the current facts and modern techniques of analysis in a "dispassionately objective" manner.
3. General assessments are made frequently in geographic areas scheduled for some sort of proposed development. These assessments are carried out by researchers from state, federal, industry, and other private organizations; sometimes teams are formed of representatives from several of these groups. In this sort of work, "dispassionate objectivity" is a key to success. In other words, the researchers cannot participate in these projects with the motives of searching for something (such as threatened or endangered species) either to enhance or to interfere with the proposed developments in the area.
4. Modern researchers, using modern techniques, are conducting a wide array of detailed analyses of the systematic affinities and taxonomic status of organisms. These research activities are basic and fundamental to all of the research being carried out on fish and wildlife resources. It is imperative that these researchers make objective decisions about systematics, taxonomy, and population identification of organisms with regard to fundamental scientific inquiry rather than with regard to the implications of certain rather political aspects, such as the threatened or endangered status of the form. This example is an illustration of the need for a definition

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[2] Rosenthal, A. H. 1981. "Motivation in Natural Resource Administration." Pp. 8-13 *in* People and Wildlife (Smith, S. H., and A. H. Rosenthal, Eds.) Occasional Papers, U.S. Fish and Wildlife Service, Washington, D.C. vi + 21 pp.

[3] Bayton, J. A., and R. L. Chapman. 1972. Transformation of Scientists and Engineers into Managers. National Aeronautics and Space Administration, Scientific and Technical Information Office, Washington, D.C. vii + 130 pp.

of roles: the researcher must take a holistic view of the scientific facts and present these to the managers who are involved in the more political activities.

Research personnel frequently become personally involved with issues that they become familiar with because they are related in some way to their research activities. Researchers must make careful decisions about which issues to pursue either in a personal or professional context and when to try to use the organization to express their positions on issues. In other words, research biologists need to make careful assessments of their motives when using the organization to express their position. Is the real motive: to identify the problem; to embarrass the organization; to become either a hero or rebel among peers; to demonstrate an ability to break the rules of the organization; to further scientific knowledge; to demonstrate that one is a crusader; to pursue single purpose self enhancement; or to instigate a conflict between a civilian or special interest group and the organization? The results of this sort of an analysis of motives reflect on the researcher's values with regard to professional loyalty, organizational loyalty, and self gain. Of course, the "me first syndrome" is in conflict with organizational loyalty and professional integrity.

It is important that a researcher's involvement with issues is not contrary to the organization's mission and policy. On the other hand, it is equally important that the organization carefully selects issues to take a stand on that do not interfere with the professionalism of its employees. The top management of the organization must make the difficult decisions with regard to what issues are most important for the organization to attempt to deal with. Research persons must develop an understanding of the constraints and pressures that their management people are subjected to, and management must understand and appreciate the needs of the professionals. This kind of mutual appreciation for the roles of others will enhance dedication to the organization and *esprit de corps* among the professionals. Every individual, at each level, within an organization has to assume responsibility for his actions. A careful analysis of the consequences of his actions leads the individual to develop his plan and course of action. Reflection on the job, responsibilities, motives, actions, and the consequences of the actions can be a learning experience to strengthen individuals in a professional context, with a resultant corresponding strengthening of the organization.

C. West Churchman

Success of Failure

1. Trying.

The title of this chapter may seem a bid odd until one recognizes that it expresses a truism: namely, that "once you don't suceed, try, try again." To catch the theme, imagine a man trying to learn how to ride a unicycle. After a bit, you might hear him say, "I'll get the hang of this thing even if it kills me"; meaning that he's willing to go all the way to the ultimate failure in order to succeed.

Note that in general one could not determine that someone was trying to do something unless the one trying fails; perfect success means a lack of "trying."

Note also that "trial and error"—or "trial and failure"—does accurately describe the process of trying, but not every failure improves performance. Indeed, many people would never get the hang of riding a unicycle, no matter how hard they tried. Somehow, the failure not only tells the trier "not that way," but it also provides hints to some triers as to a better way. Those who will never succeed probably never get these hints.

Thus the message is *not* to "try a little failure now and then; it can't hurt you." Rather, the message is to learn the quality of the failure: "Did it teach you anything, and was the amount you learned worth the failure?"

Finally, it's interesting to note that the historical root of the word "failure" is the French word "to miss the mark," an experience familiar enough to anyone trying to get the knack of shooting a gun.

2. Learning.

"Learning" is a generalization of the word "trying," and includes not only getting the knack of some activity, but also the acquisition of intellectual knowledge. The same lesson applies; all learning involves some failure. But now the lesson is not obvious at all, at least in schools and other organizations. Many teachers tend to handle student failure by punishment or put-down. In many classrooms, the good readers and the poor readers are separated, e.g., into two separate tables. The teacher gives far more attention to the good readers, so that the good get better and the poor get poorer. This policy often has the unfortunate consequence that the student learns nothing from his failures. He becomes aware that he shouldn't fail, but has no idea at all as to how to do this. A recent study demonstrates what many teachers already know, namely, a high correlation between failure to read and student violence and vandalism. How else is the frustrated kid to express his frustration?

The typical classroom scene is very odd. The "successful" students are rewarded, e.g., by a teacher's award to be taken home saying that Johnny has earned 100 for spelling. The failures never get the awards to take home, and are clearly third-rate citizens. Since they've not learned much from their failures, they tend to fail again and again. Furthermore, it's almost obvious how this failing policy could be changed. Suppose Billy doesn't get the hang of spelling words like "which," "what," etc., because he leaves out the soundless "h." A good teacher would call the attention of the whole class to the peculiarity of the "h-words" in the English language, and to the reasonableness of Billy's "failure." "After all," she might say, "we have words like 'wood' and 'will' that don't get dressed up with an 'h.' Why? Can we say something sensible about the h-dressers?" The result might well be increased learning by all the class. Everyone would learn from Billy's "failure." Furthermore, Billy wouldn't feel like a fool, but would recognize he's done something important. The teacher might even give him an award to take home: "Today, Billy helped us learn something very important about spelling."

The same lesson can be applied to organizations. Typically, the failure of a younger member to act in accordance with the policy of the organization is received by the top brass with anger and punishment: "fire that guy!" The "failure," as in the famous case of the young man who, in an attempt to enforce the Endangered Species Act, wrote to the restaurant illegally serving rattlesnakes, may be strictly in accordance with the written rules of the organization. The response of top management should not be anger and "fire him!" but rather, "Hey, this is a reasonable act but not one we want to occur again; how can we (the organization) learn to avoid such actions? Furthermore, we're pleased that Jones drew this matter to our attention."

Indeed, we can propose a general rule for organizations with respect to learning: "reasonable failure should never be received with anger." Spinoza announced a principle very much like this. He said that the highest activity humans can attain is learning, or, in his language, understanding. To understand is to be free. He also said that we become slaves to the extent that we allow our passions to govern. Thus those who respond to the failure of others by anger are themselves slaves to their passions and learn nothing.

There is no question we live in a world of uncertainty, where managers often have to make decisions which they cannot possibly know are correct. But a lot of uncertainty in organizations is created by the managers themselves who are constantly threatening punishment (firing, no promotion, etc.) in the event of failure.

Now, in the principle enunciated above, I did introduce the vague term "reasonable." I meant "reasonable" to exclude failures that have been contrived to throw a monkey wrench into the works; obviously managers have to judge whether the failure is reasonable, i.e., whether it was made with the best of intentions.

I must confess a bias in writing this section of the paper. When I was a kid I was obliged to play football, which I hated (with a passion). Since the coach always made us awkward ones appear foolish, I thought the aim of football was to please the coach. Because I didn't like the coach at all, the game seemed to me to be utterly stupid. It was only much later that I discovered that football could be fun, especially when the goal of winning was unimportant.

I live in a world where graduate education, with its grades and required courses, often resembles football practice, or perhaps boot camp for the marines. For me, grades are about the worst invention the educational system ever made. Very few students benefit from them; for the vast majority grades interfere with real learning. It's tragic to think of the many really bright students who shy away from challenging courses and select the easy ones, just to keep up their Grade Point Average.

The mood of this section comes at different levels, and in my rather passionate denunciation of the angry teachers, managers, and coaches, I did not consider one aspect of organizations which might seem to justify punishment for failure. After all, failure is often in the eyes of the beholder, and if the beholder is a teacher or manager, the failure of students or employees may be regarded by the teacher or manager as their own failure. If so, they'll find the fastest way to recover: punishment for the child, firing for the employee. After all, both are very busy people with little time to spend on each case. But as every good teacher and manager comes to learn, there must be a balance between efficiency and effectiveness; only the "cost reductionists" never learn.

3. Error.

So far, I've been talking about the role of failure in the education of younger people in our society. Now, I'd like to talk in a more general vein about failure in research. One example, error, is part of the basic methodology of science. The other is the failure to attain research objectives.

The word "error" certainly sounds like an instance of failure. But scientists actually seek error. Why? One example may suffice. During World War II, I was a statistician working for Army Ordnance, mainly on improving methods of inspection. I was asked to look into the inspection procedures for testing for misfires in bullets. Misfires occur when the small primer at the back of the bullet fails to explode and hence fails to ignite the powder that drives the bullet out the barrel. Obviously, misfires may be disastrous failures for any infantryman; also, at that time, a misfire of a calibre 50 machine gun on the wing of a plane meant that the gun was out of action for the rest of the mission. The method of inspection of primers at the time I did my study consisted of dropping a ball on a firing pin resting on the primer's surface. The kinetic energy the falling ball produced was about equivalent to the kinetic energy of the firing pin in a gun. One hundred primers were tested, and if all fired, the entire lot of about 25,000 primers was accepted.

With a little calculation, using probability theory I determined that a lot with as many as 1 percent misfires had a probability of about one-third of being accepted by this inspection procedure. But 1 percent misfires would have been disastrous in the field.

What I did was to reduce the kinetic energy of the falling ball, intentionally getting into the range where some up to all of the primers failed. I could thus estimate the range of kinetic energies that produced virtually all misfires up to all fires, and thus determine whether "virtually all" (99.9999995%) would fire in the gun. Thus in order to learn, I'd gone into the range of error (failure). I could learn very little by testing primers when all were "successful." But I could learn a great deal when I worked in the range where many of them "failed."

Indeed, as most physical scientists know (and perhaps too few social scientists), theories are not proved or disproved by success or single failure events but by working carefully in the range of error (a theory might hold in a million cases and yet clearly be invalid in the error-range.)

The lesson to be drawn here concerns the standard of "objectivity" in research. Suppose in a certain region a pollutant has been identified in a lake, and has been measured. Suppose also that it has been determined that none of a relevant species has been affected by the pollutant. Even though this fact has been well established, the fact by itself is not "objective evidence" that nothing needs to be done.

Instead, a "test of increased severity" should be used, to test the pollutant in the range where it does have an effect, and thus estimate how close the existing measure of pollution is to the "killing range."

4. Losing Battles.

I'd now like to turn to another view of success-failure, not of individuals alone but in the world of social conflict, and talk first about battles. "Battles" are not the same as "wars." A battle is a tactical episode in a war. As every general and good chessplayer knows, it may be necessary to lose a battle in order to increase one's chances of winning the war. Chessplayers call this "failure" a "gambit," where one loses a pawn or even a piece in order to increase the chances of winning the game.

For example, the desire of some members of the Fish and Wildlife Service to win every battle of the Endangered Species Act often constitutes a threat to the Act itself, especially when the threatened species is so insignificant in terms of human living. After all, the Act is quite rigid in protecting all species, and in this regard is quite unreasonable. Even Mother Nature allows species to die. To seek to win every single battle may be good tactics but disastrous strategy. This is why some "friends of wildlife" fail in the long run to serve the cause of wildlife conservation.

5. Sacrificing.

"Sacrifice" might seem to be out of place in a paper on failure, until one realizes that a real sacrifice means intentionally giving up what one would otherwise regard as a high value: the failure to continue to have a possession or a life.

Sacrifice is a basic religious design, shared by many religions around the world. The symbol of Christian sacrifice is that God gave His only son in order to save the souls of humanity by demonstrating His love. The Aztecs sacrificed many people by their blood in order to appease the gods who controlled agricultural output. From the point of view of the religions that reside in us all—including atheists and agnostics—sacrifice is terribly important and is not to be denied. Whether we worship nature; or the oceans and mountains; or wildlife; or a god or gods, sacrifice plays a central role.

But we humans of today who are so bound by the technological imperative, commit a sacrilege with respect to sacrifice. We accept the fact that in order to have the present automobile-highway system, we must sacrifice over 50,000 human lives a year. Worse still, our developers have coined the phrase "sacrificial area" to refer to places like the molybdenum mines of Colorado, or southern Utah-Nevada for the MX project, that must be sacrificed to make better steel or improve our defense. The sacrifice is made to the false god called Progress, in clear violation of the First Commandment: "Thou shalt have no other gods before me."

The importance of sacrifice for the Fish and Wildlife Service seems clear enough. The Service must conduct a religious war against the heretics who wish to make sacrifice the excuse for devastating the land and its living in worship of a false god.

Too strong? I think not. I've earlier[1] tried to defend the position that the Endangered Species Act is a religious act on the part of Congress.

6. Complete Failure.

Something now needs to be said about the negative side of failure; its tragedy. To all of us, the possibility of failure becomes so excruciatingly acute that we have to experience it in imagination, as we wait to hear whether a proposed promotion has been accepted, or a job, or acquittal, or whatever. Failure in our lives can be deeply tragic.

One of the best sources for dealing with tragedy is poetry. As Aristotle told us, the tragic art may be a way of cleansing the soul. My recommendation, therefore, is that one read poetic tragedy, perhaps because poetry is not analytic, does not insist on the logic of explanation (why in God's name did I fail?), but is largely elevating.

Consider, for example, Shakespeare's tragic plays. They don't analyze the failures of Lear or Hamlet; they tell us in poetic ways what failure means to the human spirit. My favorite is *Richard II*. In a court squabble, Richard has banished Bolingbroke and confiscated his lands. Bolingbroke has been able to convince members of the nobility to support his cause, and returns to England with enough power to

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Churchman, C. W. 1978. "A Sense of Life: Perspectives of Wildlife Policies Re Endangered Species." Pp. 9-15 *in* Concepts and Practices in Fish and Wildlife Administration (Smith, S. H., and A. H. Rosenthal Eds.) Occasional papers, U.S. Fish and Wildlife Service, Washington D.C. v + 34 pp.

threaten the king. Richard begins to realize the tragedy that he has lost the throne and expresses the loss in some of the greatest poetry of tragedy ever written:

> Let's talk of graves, of worms, and epitaphs
> Make dust our paper, and with rainy eyes
> Write sorrow on the bosom of the earth
>   for within the hollow crown
> That rounds the mortal temples of a king
> Keeps Death his court; and there the antic sits,
> Scoffing his state and grinning at his pomp,
> Allowing him a breath, a little scene,
> To monarchize, be fear'd, and kill with looks,
> Infusing him with self and vain conceit,
> As if this flesh which walls about our life
> Were brass impregnable; and humour'd thus,
> Comes at last, and with a little pin
> Bores through his castle wall, and farewell, king!
> Cover your heads, and mock not flesh and blood
> With solemn reverence; throw away respect
> Tradition, form and ceremonious duty;
> For you have but mistook me all this while
> I live with bread, like you, feel want,
> Taste grief, need friends; subjected thus,
> How can you say to me I am a king?

Note that Shakespeare does *not* say—as a psychoanalyst might—"Richard at this point realizes that abdication is a reality and resorts to various images of the killed king and his own humble humanity in order to cope with his personal uncertainty and tragedy." He says nothing of the kind, because he is a poet and the psychoanalyst is not.

7. **Idealizing.**

Whoever fails must often imagine a life without failure, a heaven where all is bliss. But this largely medieval notion of heaven was severely criticized in the strenuous age of enlightenment of the seventeenth and eighteenth centuries. Chateaubriand thought the image of eternal bliss was a place of utter boredom. To live out eternal time in uninterrupted happiness was for him just another version of hell.

The same thing must be said of perfection. To be truly perfect, without any flaws, is also an unacceptable mode of living of any life. As Jung has told us, every saint has his or her "shadow side," where evil as "failure to be good" must lurk.

From the practical point of view, all this means that every human mission, e.g., the ideal of preserving all living species, has its shadow side. Or, in more realistic terms, the "enemy" of the mission controls an impregnable bastion and can never be routed from it. The Fish and Wildlife Service, with its holy mission of saving the species, can never conquer the economic enemy that wants to create a nation of economic growth and military defense.

The war is eternal. The success of the failure of the Service lies in recognizing this aspect of its idealism.

Chester F. Phelps

Bio-politics and the Mature Professional

"Let what will be said or done, preserve your *sang-froid* immovably, and to every obstacle, oppose patience, perseverance and soothing language."

Thomas Jefferson,
Letter to William Short
(March 18, 1792)

Some 40 years ago, as a new wildlife biologist well trained by contemporary standards, I saw the then-emerging world of practical and scientific wildlife management as my oyster—a select oyster, which though it probably would present some small resistance to opening, would unquestionably yield a pearl so flawless that my efforts were destined to be absurdly rewarding. Now, however, after the experience of four sometimes bewildering decades, I can dogmatically guarantee a totality of understatement in former Director Greenwalt's comment[1] that, "The process of managing resources is a complex one."

Perhaps the unstable foundation that underlies all of the current complexities is the fact that, in our United States, fish and wildlife are no longer born free. From the moment of parturition, wild creatures are subject to the rules, regulations, policies, interests, and whims of man. And, as Scott, *Rokeby*, said "Man, only, mars kind Nature's plan..." This truth brings us to a most important, if simplistic and trite observation. It is the people, not the "critters," that present the obstacles and the difficulties in the administration and management of fish and wildlife resources. The problems are largely people problems—not fish and wildlife problems. Accepting this fact, should we not focus on identifying and resolving the human blocks as an initial prerequisite to the successful management of fish and wildlife? The art of persuading people, individually or collectively, to alter their point of view or to concur in another is really the heart of practically all professional wildlife administration—in fact all administration.

If one defines this art as "adjusting and ordering relationships between individuals and groups" or as "the art or science concerned with guiding or influencing governmental policy" (either of which is a focal point of this discussion), we have clearly arrived at the pedagogic definition of politics. And, since the technical management of fish and wildlife, *per se*, is broadly based on the science of biology, the interfacing of the people problems and the "critter" problems can aptly be labeled as bio-politics.

Bio-politics is not understood and receives little sympathy, and in fact is abhorred, by many wildlifers not at a directorial level. This is particularly true among students or those in work situations who may feel that their field management problem or research project is contemptuously above and totally divorced from everything "political." Perhaps so, in one sense, but even a lack of personal concern dictates a thoughtful appreciation of bio-politics as an explanation of "failures" in the real world of natural resource administration. "Politics" does *not* have to be approached, thought of, or addressed in the same context as that of Charles Farrar Browne when he said in his *Fourth of July Oration*, "I am not a politician and my other habits are good." A sharing of some case histories and related observations may help illustrate the practical factoring of bio-political and associated values into fish and wildlife career performances.

Some Examples

Every wildlife manager knows that game farms and fish hatcheries operated for "restocking" habitat that is already at its carrying capacity are unproductive, useless, and expensive. Not so many recognize that the applicable biological facts have been known for at least 40 years. So why has there been the persistent anomaly—for at least two generations—of these same game bird propagation farms and warm water fish hatcheries being supported by competent fishery and wildlife biologists?

In Virginia, which had the first bobwhite quail farm in the country, a decision was made early on to discontinue the propagation unit, which was at one time, the entire "game management program."

[1] Greenwalt, L. A. 1981. "A case for objective setting—Where the U.S. Fish and Wildlife Service should be in ten years." Pp. 1-8 *in* Concepts and Practices in Fish and Wildlife Administration (Smith, S. H., and A. H. Rosenthal, Eds.) Occasional Papers, U.S. Fish and Wildlife Service, Washington, D.C. v + 34 pp.

Achieving this goal, however, failed during the 25 years of patient persistence and personal involvement necessary for technical management to convince not a single interest group, but an entire generation of uninformed sportsmen and policy makers, that the game farm was a useless appendage to a program that was then concentrated on habitat development. Years of banding released quail and publicizing the insignificant number of bands recovered, together with actual field demonstrations designed to emphasize the maintenance effect of enhanced food and cover on native birds, gradually changed the opinion of the interested public to the point where the farm was phased out without furor. Today, "quail restocking" is seldom heard in Virginia. And a sound, satisfying sequel is the voluntary yearly establishment and maintenance of quail "food patches" by many land-owners and sportsmen's organizations.

A similar, biologically sound objective of establishing a seed stock of white-tailed deer in extensive unoccupied range covering more than half of the state, was opposed vigorously and successfully for many years, for single-interest reasons, by a dominant policy-making body that was supported, in turn, by an influential public segment—a well-organized but comparatively small group of fox hunters. These hunters were concerned that given the choice, their purebred foxhounds would opt for the excitement of a deer chase, much to the chagrin of their purist masters. Their solution was simple: no deer, no problem, no embarrassment. And this reasoning was shared and promoted by a majority of the group that established agency policy. Again, the essential component in attacking the problem was continued commitment to the goal—a goal that was reached within a decade, with the encouraged help of pro special interest groups—in this instance not only selected wildlife organizations but also rural school children who added to the ignominy of the policy-makers by contributing (literally) pennies to "buy deer." The range was eventually stocked and the annual deer harvest increased from less than 500 to 70,000. And foxes and fox hunters still thrive—indicating that conflicts are *not* necessarily permanent.

An objective of maximizing the recreational potential of an expanding eastern wild turkey population by the establishment of a spring season demanded another long-term commitment, and passed through many years of failure before the goal was reached. Here bio-politics became significantly political because the initial step required treading on a jealously guarded legislative prerogative by eliminating the prevailing and prohibitive statutory "outside dates" for hunting seasons. There is a point here for those who look askance at the tolerance of a director for things political despite the sage admonition of that master leader Winston Churchill who dryly observed that one must be a politician before he becomes a statesman. The spring hunting of wild turkeys is limited to gobblers and is a most desirable and sound wildlife management practice, because most mature gobblers are surplus to biological needs. They are best harvested immediately before and during the breeding season, when their then white head, beard, and more ready response to calling make a "mistake" unlikely. The concealed, motionless, and usually camouflaged hunter must have considerable skill, as well as luck, to be successful. But despite these benefits, the objective could not be reached without first obtaining the concurrence of many elected representatives of the people—i.e., politicians—to remove the legislative barrier of "outside dates." A statesmanlike argument that a spring season would ensure the best management of a natural resource produced considerably less interest than a recitation of the challenging and rewarding benefits to sportsmen, a group of individuals noted for positive opinions, and all of whom were voters!

It is a fact, in this practical world, that key individuals in a position to dictate the direction and practices of a governmental organization by influencing or controlling policies and budgets may be indifferently ignorant in the field of natural resources. But, what *are* the options available to a director to influence a person or persons more interested in maintaining a public status than in actively promoting the wide use of a minor natural resource? An understanding that a director must operate within the constraints of bio-politics expressed in terms of the possible can also clarify the reason for his not indiscriminately embracing all proposals fed to him—and this too may lead to rejections and "failures" of concepts and projects to which those advancing them may be totally and emotionally committed.

There should be a certain empathy between the wildlife law enforcement officer who spends a miserable night in a bitterly cold marsh sipping coffee from a thermos while trying to apprehend a duck trapper, and a director whose desk light in a warm office at midnight illuminates a bottle of Di-Gel and the pages listing the committee assignments of legislators!

The ultimate elimination of legislative restraint in

Virginia did not produce universal commitment to the concept of a spring gobbler season, even among some immature wildlife biologists who were more comfortably short-sighted than professionally visionary. Others cited vague objections to hunting any species in the spring, the alleged inedibleness of turkeys taken at that time of year, "breaking up nests," banning the use of dogs, and the supposed increased hazard of forest fires by having hunters in the woods as "reasons" why a spring gobbler season was absurd. More than a decade elapsed before the spring season was accepted statewide and these were years of failures in terms of total attainment of the objective. That objective was reached only by a gradual approach involving a practical learning process that started with an "experimental" season of a few days on a small public area. Over the years, the length and scope was slowly expanded in direct ratio to public acceptance until the entire state was included.

It was also recognized early on that a dependable method of recording hunter take of deer, bear, and turkey was a most desirable if not essential tool to the successful management of these species. It was felt the most accurate method would require that the hunter take the game to a check station where an attendant would record the desired data for later collection, compilation and analysis. Transportation of the game, except directly to a check station, would be illegal without an attached duplicate of the game tag. Biologically, there was no problem—the data were needed. There were no political obstructions, *per se*, or policy difficulties. An immediate regulation mandating statewide checking of the take was an option—an option that was rejected. Rejected partly because of what can be called the "Prohibition Syndrome" (i.e., if it isn't popularly acceptable it won't work), and partly to preserve and foster confidence in, and continue acceptance of, the regulatory agency.

The selected approach was again one of gradualism starting in a unique mountain area where the wildlife as well as the land had been ceded by the state to the U.S. Forest Service. Here, at access road check points, the duplicate game transportation (and data) tag was affixed to all deer and bear removed from the area. The checking was done by a team of federal and state personnel as a cooperative effort that would enhance, it was hoped, a creative image of popular acceptance of the tagging concept. Successive steps over a 15-year period slowly extended the system to all national forests within the state, to the mountain region (the western third of the state), and eventually to the entire state; including a tagging requirement for wild turkey that smoothly accompanied a developing population. So satisfyingly successful was the "soft sell" that not only was the hunting public cheerfully responsive to the taking of their deer, bear, and turkey to numerous informal check stations—country stores, service stations, and other businesses—but the owners of these stations competed with each other for the privilege of donating their services!

Some Insights

In terms of approaches to problems, the preceding examples relate more closely to defensive rather than to offensive management. Positive or offensive management seeks to maximize the organization's objectives and willingly accepts an appreciable element of risk. Defensive, or more passive management, accepts something less—something that is considered possible and safe, with minimum risk. Although the objective of both offensive and defensive management is the same, the defensive approach appears preferable for a public-oriented organization. In contemplating this, one might reflect on the words of Shakespeare in *King Henry VI*, "The smallest worm will turn being trodden on."

Practically all state fish and wildlife agencies are required to operate under some form of a regulatory or policy making group somewhat akin to the statutory visiting committee, treated by William D. Carey[2] in a previous paper, and presenting many similar interrelationships. Viewing this group as a microcosm of a legislative body will better place their role in perspective in the decision making process and their influence on the professional fish and wildlife manager. Because the members of the policy body are responsive to the public, either directly or through higher political authority, they must be sensitive to the same democratic processes that control popularly elected representative bodies. This responsiveness may involve public hearings to present and explain proposals and afford them public exposure. Public feedback may be the best gauge of the level of acceptance or resistance to which the regulatory authority can be properly and progressively responsive. Reasonable public acceptance of issues that affect them is more than desirable before any legislative or regulatory authority can make its decision "stick." This is particularly true of volatile and emotional issues such as "doe seasons" and the tunnel vision approach of specific interest groups. To paraphrase a popular current advertising slogan, "You can sell no regulation before its time." These considerations are, properly, not the responsibility of the great majority of those working in the fish and wildlife field but, again, an appreciation and understanding that someone in the organization must afford such considerations the highest priority contributes to a mature career awareness.

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[2] Carey, W. D. 1981. "On Classifying Rare Species: The Statutory Visiting Committee." Pp. 1-3 *in* Emerging Patterns and Problems in Natural Resource Administration (Smith, S. H., and A. H. Rosenthal, Eds.) Occasional Papers, U.S. Fish and Wildlife Service, Washington, D.C. vi + 21 pp.

Among the requirements for the successful management of fish and wildlife resources is a constant appreciation that a good "business" decision for the organization must be evaluated by the interaction of that decision with the policy makers and the people to whom they are responsive. In this context and for this reason, organizational objectives may represent an apparent, and probably real, divergence from many of the goals that regularly surface within an agency. Prudent management of fish and wildlife does not opt for the establishment of goals that readily permit the pointing of a public accusatory "you failed" finger. Generally, definite numerical goals can represent an easily sprung trap not only for the immediate personalities involved but also for the image and long-term success of the organization. When a director allocates the available financial and personnel resources toward providing increased opportunity for more people to use fish and wildlife resources, his progress can be expressed in terms of increased opportunity that the additional acres or water access points provide. The number of people using the lands and waters, which may fluctuate from year to year, becomes secondary to the goal of increased opportunity for *everyone* which—once attained—remains constant. Certainly this goal of opportunity is easier to achieve, is more acceptable, and contributes more to the "good of the people" than does the maintenance of a public expectation of a constantly increasing or even a stabilized harvest of deer, grouse or trout. In view of the strong probability of increased emphasis, at least in terms of public support and consciousness, on the non-consumptive use of wildlife, this and similar concepts may become more dominant and desirable for themselves and for the supportive acceptance of other agency objectives. However, an agency priority of increased opportunity can be difficult for field managers to accept. A game biologist may know that the annual harvest of deer can be increased, if funds are available for long-term habitat manipulation, and the fishery biologist may know that the productivity of an impoundment can be greatly enhanced by annual, and expensive, fertilization. To these persons the "diversion" of funds and effort to a less impressive and less measurable activity can be a bitter and frustrating experience.

It is readily apparent that there are many areas and many opportunities for differences of opinion in the arena of fish and wildlife management although the dedication of the workers to their jobs is remarkable when compared to that in some other professions. America does not have a lifelong employee structure like that in Japan and a leading New York executive recruiter has recently stated that company loyalty is no longer a sought-after attribute. His statement is definitely not applicable to the fish and wildlife profession, for loyalty is still a highly prized trait as well as a self-rewarding one from the standpoint of job satisfaction. Any fish and wildlife director with direct or indirect responsibility and accountability to the public is assured of a total complement of criticism, frustration, and challenge by that public. Any additional load generated internally is understandably difficult to appreciate and is more than unfortunate for everyone concerned, because many persons—particularly those not associated with office structure—have no idea of what factors motivate the director, and consequently fail to understand, or may resent, his actions.

Some Conclusions

An effort has been made here to stimulate contemplation of some of the more human influences associated with the fish and wildlife profession—some of which can have an obviously direct or a subtle and unrecognized effect on job achievement and job satisfaction. And sometimes the relationship between them may lie in the area of tolerance and understanding. There is also a similar message from C. West Churchman[3] in an earlier paper, "An ardent lover of wildlife may be puzzled by the behavior of other people in the Service until he comes to recognize that for them the basis of administration in the Service is political and not love. He then may come to see that there are a variety of self images in addition to his own, and may thereby increase his understanding of the Service as a profession."

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[3] Churchman, C. W. 1981. "The Self Images of the Professional." Pp 1-7 *in* People and Wildlife (Smith, S. H., and A. H. Rosenthal, Eds.) Occasional Papers, U.S. Fish and Wildlife Service, Washington, D.C. vi [illegible]

We have seen that attainment of established goals and objectives can require a long-term commitment with a great deal of personal involvement and dogged persistence. Success seldom comes overnight. Could there generally be a direct correlation between the significance and importance of an objective and the time and effort required to reach it?

Agency objectives may be established by the practicalities of the obtainable, and failure to reach a differing personal goal may actually be a success when there is appreciation and understanding of the prevailing objective in relation to its effect on all components of the organization.

"People problems" bio-politics, individually and collectively present the greatest difficulties, and the most challenging opportunities, in the field of fish and wildlife management. Understanding and accepting that the shots are sometimes called by those who would have difficulty differentiating between a rifle and a shotgun will aid a worker in maintaining a continuing commitment to personal goals and loyalty to the agency and its goals.

Desirable goals and objectives are relatively easy to establish. The methodology of attaining them, which is the central issue, almost invariably must be tempered by the practical bio-politics of accomplishment. Rarely, if ever, does a professional fish and wildlife manager fail because of lack of *technical* expertise. This most significant theme of success, or failure, and one that warrants mature reflection was expressed by Sir Frances Darwin in 1914 when he said, "But in science the credit goes to the man who convinces the world, not to the man to whom the idea first occurs."

Spencer H. Smith and Albert H. Rosenthal

Conclusion: Understanding and Job Satisfaction

One of the oft repeated myths in the classical liturgy of Public Administration is the dictum that "No man can serve two masters," often used to support the traditional organization chart.

The fictional nature of this precept is documented by Clyde Jones who points out that professionals in public agencies feel accountable to several commitments in addition to their organizational superiors. In addition, Jones presents a comprehensive list of the reasons professionals do what they do. This leads to his analysis of the several loyalties expected of them. Jones points out that the professional must be loyal both to his profession and to his organization. He must develop a spirit of accommodation based upon an understanding of directed authority—a premise of mission-oriented agencies. When there is this balance of professional and organizational loyalty, all is well. However, Jones suggests, this balance is difficult to achieve when the staff and managers are not in close communication and oblivious to bio-politics and other aspects of the administrative process. Knowledge of the decision process is imperative if this balance is to be achieved. Some understanding of "success of failure" is important on the part of both leadership and staff. The importance of developing a "dispassionate objectivity" by professionals is emphasized. Jones makes it clear that the professional must examine and understand his motives if he is to avoid conflict with both his organizational loyalty and professional integrity.

In the paper, intriguingly titled "Success of Failure," Churchman addresses himself to the questions outlined above in the Introduction. He points out that the message requires consideration of the quality of failure. By this, he indicates that learning from the unsuccessful experience equates to long-run success.

Churchman illustrates this concept in the areas of university grading, scientific research, chess, and government policy. He considers the terms "sacrificing," "complete failure," and "idealizing."

Chester Phelps approaches the subject of "Bio-Politics and the Mature Professional" by pointing out that the real problems of natural resource administration are people problems not resource problems. He urges attention to the views of people as the key need in wildlife administration, in fact, all administration. He defines "bio-politics" as the interfacing of the people problems and the "critter" problems.

Phelps affords a series of real-life examples illustrating the practical factoring of bio-political values into fish and wildlife performance. He underscores several concepts based upon his 40 years' experience in the field. He concluded by re-emphasizing the need for tolerance and understanding of the real problems of administration by professionals if they are to be effective and achieve meaningful job satisfaction.

The common threads running through these papers call for an understanding by the professional of the milieu in which the agency operates in a democracy, and by management of the concerns and divided loyalties of the professional in a public organization.

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C. West Churchman is a Professor-Emeritus of Business Administration and Research Philosopher at the University of California, Berkeley. He has worked in many fields including geometry, physical chemistry, biology, social psychology, but most especially in management science and planning. He received his B.A., M.A., and Ph.D. in Philosophy at the University of Pennsylvania. He has served as Head of the Mathematics Division of the Frankford Arsenal Ordnance Laboratory in Pennsylvania; he taught philosophy at Wayne State University and Case Institute of Technology. Since 1957, he has been Professor of Business Administration at the University of California, Berkeley, and he has served as Associate Director of the Social Sciences Research Group at the Space Sciences Laboratory and is now Acting Chairman of the Center for Research in Management, University of California, Berkeley. He has been editor-in-chief of "Philosophy of Science" and "Management Science." He serves as consultant to federal agencies and private industry. He is currently Chairman of the Board of the Wright Institute, Berkeley. Among his numerous writings are "Introduction to Operations Research" (with R. L. Ackoff and L. E. Arnoff); "Prediction and Optimal Decision, Challenge to Reason" (selected as one of the best books on Management, 1968); and "The Systems Approach," which received the McKinsey Book Award for one of the best books on Management. His latest books are "The Design of Inquiring Systems," "Thinking for Decisions" (with Auerbach and Sadan) and "The Systems Approach and Its Enemies," Basic Books, 1979.

DR. ALBERT H. ROSENTHAL

Albert H. Rosenthal served as the founder and director of the Division of Public Administration at the University of New Mexico from 1968 to 1974. He is Director and Professor-Emeritus of the Program for Advanced Study in Public Science Policy and Administration at the University of New Mexico. He received his doctorate in Government at Harvard in 1949 and an honorary Doctor of Laws degree from the University of Denver in 1973. His career presents a unique combination of both the teaching and practice of Public Administration. He served as an official with the Social Security Board, the Department of State, and for 13 years as Regional Director of DHEW in Denver. In 1970-71, he served as Head, Office of Public Understanding of Science, National Science Foundation. He was Director and Professor of the Graduate School of Public Administration at the University of Denver and Professor of Public Administration at the University of Minnesota prior to coming to the University of New Mexico. He is a recipient of the Rockefeller Public Service Award, the Denver Civic Award, and the New Mexico Distinguished Public Service Award. He is the author of "The Social Programs of Sweden," and the editor of "Public Science Policy and Administration" and "Science Leadership for Tomorrow" and has published numerous articles in this field. He served as a member of the Science, Technology and Public Policy Committee of the American Association for the Advancement of Science, 1977-79.

MR. SPENCER H. SMITH

Spencer H. Smith retired from the position of Western Field Coordinator for the U.S. Fish and Wildlife Service in January 1980. He received his B.S. Degree in Fishery Biology from Oregon State University, and early in his career implemented and directed a fishery program for the State of Mississippi, 1949-55. He began his federal service (1955 to present) as a fisheries biologist in the Southeastern states. His tenure of regional assignments included serving as the Regional Supervisor, Director of River Basin Studies, and then as the Assistant Regional Director for the Southeast Region. His national level role began in 1966 with assignment to the position as an Assistant Director of the Service. He next served as a special assistant to the Assistant Secretary of the Interior for Fish and Wildlife and Parks, and later was named to the positions of Deputy Director and then Director of the U.S. Fish and Wildlife Service. In 1973, for family health reasons, he assumed his current responsibilities and is now located in Denver, Colorado. He has served on numerous Interior and joint Interior-State task groups and committees including the State-Federal Cooperation on Interior Lands Committee; Chairmanship of a task group in an evaluation of the Fish and Wildlife Service program and organization; service on the Interior task groups on the Alaska pipeline and oil shale production; and member of the planning committee for Keep America Beautiful.

DR. CLYDE JONES

Clyde Jones is the Director of the Denver Wildlife Research Center. He was trained at Hastings College (B.A.) and at the University of New Mexico (M.S., Ph.D.). He has served on the staff of the University of New Mexico, Tulane University, and the Delta Regional Primate Research Center. He began his federal service in 1970 as Chief of the Mammal Section of the Bird and Mammal Laboratories. He next served as the Director of the National Fish and Wildlife Laboratory before assuming his current responsibilities in 1979. He has served on numerous task forces and committees for the U.S. Fish and Wildlife Service and the Department of the Interior. He participates in the activities of several professional societies. His personal research interests include studies of the systematics and ecology of mammals. He is an author of 60 scientific papers.

MR. CHESTER F. PHELPS

Chester F. Phelps was designated Executive Director-Emeritus by the Virginia Commission of Game and Inland Fisheries when he retired from that agency with 41 years of service. The last 20 years was as Executive Director and earlier as the Commission's first Game Management Chief. Prior to work with the Virginia Commission he was employed as a forester with the Pennsylvania Department of Forests and Waters, the United States Forest Service and the National Park Service. He holds a degree in forestry from North Carolina State University and a graduate degree in wildlife management from Virginia Polytechnic Institute and State University. He is a charter member of the Wildlife Society and the recipient of numerous professional awards, among them the Seth Gordon Award of the International Association of Fish and Wildlife Agencies, the C. W. Watson Award of the Southeastern Association of Fish and Wildlife Agencies, the Herbert C. Bonner Award of the National Association of State Boating Law Administrators, the Charles Banks Belt Award of the Atlantic Waterfowl Council and the Virginia Governor's Award for Conservationist of the Year. He has served as a general chairman of the North American Wildlife Conference, as president of the Southeastern Association of Fish and Wildlife Agencies, the Southeastern Section of the Wildlife Society and the Commonwealth Chapter of the Isaac Walton League; also as chairman of the Atlantic Waterfowl Council and as a member of the recent National Wildlife Refuge Task Force. He was an original appointee and had many years as a member of the Secretary of Defense Conservation Award Selection Committee and on the board of directors of the Virginia Outdoor Recreation Commission, the Virginia Forestry Association, the Fontana Conservation Roundup and Keep Virginia Beautiful. He has continuously been on the Executive Committee of the International Association of Fish and Wildlife Agencies since 1965, was president of the organization in 1970-71, and was elected Secretary-Treasurer in 1973, a position he still holds.

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